

PMC-EF2a

(204602)

**U.S. DEPARTMENT OF ENERGY
EERE PROJECT MANAGEMENT CENTER
NEPA DETERMINATION**



RECIPIENT: University of South Carolina

STATE: SC

PROJECT TITLE : Development of Low Platinum Alloy Cathode Catalyst for PEM Fuel Cells

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-PS36-08GO98009	DE-EE0000460	GFO-10-342	EE460

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

B3.6 Siting, construction (or modification), operation, and decommissioning of facilities for indoor bench-scale research projects and conventional laboratory operations (for example, preparation of chemical standards and sample analysis); small-scale research and development projects; and small-scale pilot projects (generally less than two years) conducted to verify a concept before demonstration actions. Construction (or modification) will be within or contiguous to an already developed area (where active utilities and currently used roads are readily accessible).

Rational for determination:

The University of South Carolina proposes to use federal funds to develop a proton exchange membrane fuel cell catalysts for the oxygen reduction reaction with ultra low Platinum loading. This project will lead to the design of platinum group metal content to be lower than the DOE 2015 target for content and meet other 2015 DOE electro-catalyst targets.

This project involves two phases.

Phase 1 will include the development of hybrid cathode catalysts to achieve a proton exchange membrane that will allow for ultra-low loading of platinum with the expected outcome high durability and activity which are comparable to typical fuel cell catalysts, development of platinum group metal catalyst on porous conductive polymer support and high and low surface area corrosion resistant non-carbon support, evaluation of electrochemical kinetics of oxygen reduction, structure to catalyst property relationship studies, performance and durability studies of hybrid cathode catalysts under single cell conditions.

Phase 2 will consist of a durability analysis of hybrid cathode catalysts under short stack conditions, and finally project management and reporting.

This project involves indoor laboratory work that will take place in 3 locations, University of South Carolina, Yonsei University – Seoul, South Korea, Hyundai-Kia Motor Company – Seoul, South Korea. An R & D Questionnaire has been completed by the applicant and thoroughly addresses chemical and safety protocols.

This project consists of indoor laboratory bench scale research and development studies in existing facilities, therefore an CX B3.6 will apply.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

None Given.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____

NEPA Compliance Officer

Date: _____

5/13/10

FIELD OFFICE MANAGER DETERMINATION☐ Field Office Manager review required**NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:**

- ☐ Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- ☐ Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____

Field Office Manager

Date: _____